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ABSTRACT

Organized as a bibliographic essay, this paper examines the many sources available for developing a theory of visual literacy. Several definitions are offered in order to clarify the meaning of the term "visual literacy" so that meaningful research can be conducted on the topic. Based on the review of resources, three recommendations are offered so that visual literacy research and practice may have some philosophical direction and justification: (1) reexamine the older sources suggested by John L. Debes (the "father" of visual literacy) to see if there is any justifiable basis for theory development in visual literacy; (2) review some of the newer sources suggested in this paper that relate to mental imagery, dual coding, mnemonics, and visualization and make some philosophical connections between these newer sources and the older ones in order to develop a substantive theory that is convincing; and (3) design future empirical research that stresses the visual thinking component of the definition advocated in this paper. An alphabetical listing of the references and resources is attached. (RL)

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Sources for Developing a Theory of Visual Literacy

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Sources for Developing a Theory of Visual Literacy

Instructional technologists know the importance of visual technology in education. Students are surrounded by television, books, magazines, newspapers, and motion picture films. Many educators are concerned that the media prey on the unaware, unwary reader or viewer. Ausburn and Ausburn (1978, p. 292) said that we are "manipulated and propagandized" by highly visual technology and suggested that we can combat the situation only by becoming visually literate.

What does visual literacy mean? The number and diversity of groups involved with visual literacy have meant that there are a number and diversity of definitions. Though many articles on visual literacy have appeared in Audiovisual Instruction (Cureton & Cochran, 1976; Damerell, 1976; Dardig, 1974; Fransecky & Ferguson, 1973; Minor & Cafone, 1977; Muller, 1974; Spitzer & McNerny, 1975; and Ruyan, 1977) and though the entire May 1972 issue was devoted to the topic, people in other fields have been as active in the visual literacy movement as those in instructional technology. Professionals from art, English, reading, psychology, philosophy, linguistics, and communications are all active in the visual literacy movement.

We would expect those in the field of education to be in the forefront of the visual literacy movement and generally they are. However,

instructional technologists have not always led their fellow educators to the area of visual literacy. Flynn (1972), a supervisor in elementary education, explained how he got involved with visual literacy without the help of an instructional technologist:

> It was through the efforts of a language development teacher and an art teacher attempting to visually record the physical conditions that were impeding learning for our children that we "discovered" the power of the camera as a teaching tool. Once this "discovery" was made, we were on our way. (Incidentally, none of us came to the profession by the AV route.) (p.42)

John L. Debes (Fransecky & Debes, 1972) coined the term visual literacy and founded its national conference. The International Visual Literacy Association grew out of that first conference and today has its headquarters at the National Center for Visual Literacy, Gallaudet College, Washington, D.C. With the help of Eastman Kodak Company in Rochester, New York, Debes organized the First Annual National Conference on Visual Literacy in March of 1969. From this conference came the definition of visual literacy that was later adopted by the Association for Educational Communications and Technology Task Force on Definition and Terminology:

> Visual literacy refers to a group of vision competencies a human being can develop by seeing at the same time he has and integrates other sensory experiences. The development of

> these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects and/or symbols, natural or man-made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communication. (Debes, 1970, p. 14)

This definition is not universally accepted; even Debes (1970, p. 14) anticipated that it was sure to be changed, and to date there is still not much agreement on a definition.

Flynn (1971) provided the following definition:

> A Visual Literacy Program (school sense) is a communication vehicle that provides boys and girls with the opportunity to record and interpret their world as it really is, both objectively and subjectively. (p. 42)

Wendt (1962) said, "The meanings of the pictures are not in the pictures themselves but rather in what we bring to the pictures" (p. 175). Both of these definitions recognize the subjective element in interpretation of visual media.

Case-Gant (1973) suggested the following definition: "Visual literacy refers to that group of skills which enables an individual to compose visual messages and to read and interpret the visual messages of others with sensitivity" (p.5).

Ausburn and Ausburn (1978) stated: "Visual literacy can be defined as a group of skills which enables an individual to understand and use visuals for intentionally communicating with others" (p. 291). In addition, Ausburn and Ausburn (1978) pointed to two basic principles of visual literacy:

> 1. Visuals are a language. Like verbal language, they have vocabulary, grammar, and syntax. For example, in a picture, elements such as colour, light and shade, line and placement of individual items serve as the vocabulary which combine to form the entire visual message. When several pictures are used to tell a visual story, they must be arranged in a certain way in order to make sense, just as words must be arranged according to a verbal grammar and syntax structure in order to form sensible phrases and sentences.
>
> 2. A visually literate person should be able to read and write visual language. If one thinks of reading and writing in a broad sense as decoding and encoding messages, then the visual analogues of verbal literacy and language usage are quite easily grasped. Reading visual language is a matter of being able to interpret the visual messages, such as gestures or pictures, produced by others; writing it entails being able to compose meaningful visual messages oneself. It is even possible to speak visual language through the expressive use of the face and body. (p. 291)

Johnson (1977) wrote, "Debes' efforts to define visual literacy and to clarify its instructional significance have been inconclusive" (p. 16). However, Clark and Clark reported, "Visual Literacy has a much wider and richer theoretical context than is usually brought to the attention of the people trying to understand the concept" (1976, p. 4). More understanding and acceptance of the visual literacy idea would result if this wider context of the theoretical foundations were explained and justified.

A review of both the older and newer theoretical sources of visual literacy is needed. Randhawa and Hunt (1973) explained the importance of defining visual literacy for research purposes:

> Research efforts should provide evidence of the efficacy of visual literacy so that appropriate teaching methodologies to facilitate visual literacy can be acquired. The value of various audio-visual, particularly visual, explanations as they improve learning on tangible criteria need to be determined. It would seem that visual literacy is a catchcan term which means many things to many people. Until researchers clearly decide what they mean by this term, the authors of this paper feel that much time will be wasted trying to relate already well documented areas which may or may not be relevant. The time has come for researchers to zero in on a clear, well operationally defined area of research calling itself visual literacy. (pp. 16-17)

The many groups involved with visual literacy have borrowed theories from the linguists, developmentalists, psychologists, perceptionists, art theorists, and transformational grammarians. Debes, Williams, Turbayne, Moffett, Fearing, Buber, Mead, Chomsky, Fries, Arnheim, and McKim (Amey, 1976; Ausburn & Ausburn, 1978; Debes, 1968; Debes, 1969; Debes, 1972; Debes, 1974; Fransecky & Debes, 1972; Randhawa, 1971; Williams & Debes, 1970) have contributed to the development of a theory for visual literacy. A brief description of their work follows here.

John L. Debes developed the concept of visual literacy and was named the "Father of Visual Literacy" at the First National Conference on Visual Literacy (Hocking, 1978, pp. 4-5); therefore his articles are probably the best sources to begin a theoretical study of the subject. Debes referred to the parameters of visual literacy as being unknown:

> I think of visual literacy as a great amoeba-like entity with pseudopods labeled with the names of sources such as semantics, linguistics, philosophy, psychology, art, and screen education. All of these fields have contributed to our ideas about visual literacy. (Debes, 1969, p. 25)

Debes and Clarence Williams formed the Center for Visual Literacy in 1970 at the University of Rochester. "Its purpose was to stimulate

and foster growth in Visual Literacy, serve as a clearinghouse for information regarding activities and be responsible for creating interest in expanding conceptual horizons of the multi-disciplinary field" (Hocking, 1978, p. 7). When Williams took a position at Gallaudet College, Washington, D.C., the Center was moved there. Colin Murray Turbayne is a philosophy professor at the University of Rochester and is considered part of the "Rochester School" along with John L. Debes and Clarence Williams.

Debes borrowed ideas not only from Turbayne, but also from James Moffett, author of A Student-Centered Language Arts Curriculum. Moffett is a leading exponent of the self-directed programs of study in the language arts. In his dissertation on visual education, Wood (1974) combined the sequences of visual education concepts and skills with Moffett's approaches to teaching English. Moffett's ideas were also used by Debes (1975) when he developed the concept of organizing visual information and translating that into language.

In another theoretical source worth investigating, Amey (1976) used the theories of Fearing, Buber and Mead for developing a philosophy of visual literacy and its relationship to the production of children's television programs. Franklin Fearing is a psychologist whose article, "Human Communications," in AV Communication Review was used extensively by Amey (1976, p. 18). Martin Buber is an existential thinker interested in gaining deeper awareness through human interaction (Amey, 1976, p. 21). George Herbert Mead, author of Mind, Self and Society, is considered the founder of transactional psychology (Amey, 1976, p. 20).

Noam Chomsky, a transformational grammarian at the Massachusetts Institute of Technology, also influenced Debes. Chomsky's research on language syntactic structures and the study of the mind provides some theoretical foundation for visual literacy (Debes, 1969, p. 25). Two important books by Chomsky are Language and Mind and The Logical Structure of Linguistic Theory.

Charles Carpenter Fries wrote The Structure of English in 1952. Fries, who proposed a use-centered or meaning-centered approach to communication structure, was influential in visual literacy concept development (Debes, 1969, p. 25).

Rudolph Arnheim and Robert H. McKim have both contributed to the theory of visual literacy especially in the area of visual thinking. McKim wrote Experiences in Visual Thinking, a theoretical source with practical applications for visual literacy. McKim (1972) said:

> Visual thinking pervades all human activity, from the abstract and theoretical to the down-to-earth and everyday. An astronomer ponders a mysterious cosmic event; a football coach considers a new strategy; a motorist maneuvers his car along an unfamiliar freeway; all are thinking visually. You are in the midst of a dream; you are making order out of the disarray on your desk: you are thinking visually. (p. 6)

In addition, articles and books by Dondis (1973), Clark and Clark (1976), Fork and Newhouse, (1978), Hill (1978), Randhawa and Hunt (1977), Barley (1971), Cureton and Cochran (1976), Flory (1978), Salomon

and Cohen (1976), Lamberski (1976), Randhawa, Back and Myers (1977) and Mulholland (1973) have elaborated on and extended theoretical views on the subject. Other related sources for theory and research include: Arnheim (1957), Bobker (1979), Gregory (1970, 1978), Luria (1976), Dwyer (1972), Brody and Legenza (1980), Duchastel (1980), Warnock (1976), Winn (1980), Inde (1977) and Watslawick (1977).

Many authors have mentioned sources for a theoretical foundation of visual literacy but failed to give a thorough analysis or satisfactory explanation of the theory and its link to practice. For instance, no one has satisfactorily explained the analogy between visual literacy and verbal language. We need an historic, analytical study of the philosophical origins of visual literacy. Debes cited some specific sources for investigation of the philosophical foundations. They were Turbayne's The Myth of Metaphor, Fries' The Structure of English, Hebb's The Organization of Behavior, Chomsky's Syntactic Structures, and Wendt's "The Language of Pictures" in S. I. Hayakawa's edition, The Use and Misuse of Language (Williams & Debes, 1970, pp. 15-16).

Other articles by Debes provide readings that are useful for understanding the bases of visual literacy. In "Some Foundations for Visual Literacy" (Debes, 1968), he mentioned Piaget's The Child's Conception of Physical Causality, Kees and Ruesch's Non-Verbal Communication, and Maslow's article, "Language Training: A Form of Ability Training." In a paper presented in 1972 at the National Conference on Visual Literacy, Debes gave the following sources for research in philosophy: Birdwhistell's Kinesics and Context, Moffett's Teaching the Universe of

Discourse, Gaffron's "Right and Left in Pictures" from Art Quarterly, and Randhawa's "Intellectual Development and the Ability to Process Visual and Verbal Information" from AV Communication Review (Debes, 1972). Later, in a 1975 paper, Debes pointed to the research of Thorndike on IQ scores; the ideas of Benjamin Lee Whorf, a semanticist; Geshwind's left- and right-brain hemispheric research; and Patten's article, "Visually Mediated Thinking: A Report of the Case of Albert Einstein," that appeared in the Journal of Learning Disabilities in 1973. Together these sources may provide the research with which to analyze and organize a theoretical base for visual literacy.

Some writers do not believe that there is such a thing as a theory of visual literacy. Johnson (1977), for instance, identified no single theory of visual literacy but found a "confluence of theories" (p. 140). He prefers the term media literacy to visual literacy. Johnson (1977) wrote:

> I was disappointed to discover that visual literacy is really nothing more than a "confluence of theories," brought together to form a vague, unorganized concept that tries to explain the notion of "visual sequencing." It is not surprising that the visual literacy "movement" has not "moved" very far. The movement has generated some "research," (most of which is rather confusing), and the term "visual literacy" has gained some "currency" in educational circles. However, very few of the conclusions reached by visual research can be used for teaching English. (pp. 140-41)

There are, however, many educators who accept visual literacy as valid (Randhawa & Hunt, 1977; Ausburn & Ausburn, 1978; Clark & Clark, 1976; Flory, 1978; and Cureton & Cochran, 1976).

Hocking (1978) is a good example of someone committed to visual literacy education. He said:

> Based upon the results of this study, one major suggestion for Visual Literacy education would be an exploration of the feasibility of providing in-service, college-level courses, seminars, workshops and continuing education courses, as legitimate, convenient routes for educators to develop competencies in:
>
> 1. Media Skills
> 2. Technique
> 3. Theory
> 4. Integration of Visual Literacy with Academic Disciplines
>
> For those who might be working toward a degree, such college courses should be available. For those educators who are not interested in additional academic credentials or cannot make the necessary changes required in order to earn that degree, in-service training, seminars or workshops which would meet their needs to acquire Visual Literacy competencies should be provided. (p. 129)

This paper explores the theory of visual literacy as suggested by Hocking's point 3 (1978, p. 129). My assumption then is that visual

literacy is important in education and its theoretical foundations deserve elucidation. It is necessary to know the meaning and theoretical foundations of visual literacy before one can use visual literacy effectively. The instructional technologist needs a survey of the theoretical foundations of visual literacy in order to discover his role in the visual literacy movement. Organizing and analyzing current theories mentioned in the literature will lead to a better understanding of a theoretical foundation for visual literacy.

Debes (1968) explained that an understanding of visual literacy "is based on the confluence of knowledge, theory, and technology in many areas" (p. 963). However, as Johnson (1978, p. 19) pointed out, Debes never made a systematic connection between the theories he cited and the practices and programs that exist in the visual literacy movement. To clarify the visual literacy concept, this paper presents and examines a definition of visual literacy.

Although many studies of visual literacy exist (Platt, 1975), they have not analyzed the development of its theoretical foundations. Several writers have commented on the need for investigating the theoretical and psychological foundations.

Gozemba (1975) said:

> Training in visual literacy is indeed a worthy educational goal in itself, but when as English teachers we simply assume that this will have an advantageous effect on verbal literacy we are operating in a naive way that militates against our using visual media fully. What is needed is a re-evaluation of

> the philosophical and psychological bases underlying the nature of our learning and knowing, followed by whatever empirical exercises seem warranted. (p. 3)

Hocking (1978) commented, "a study which would more definitely identify parameters of Visual Literacy programs would provide valuable data not now readily available" (p. 130).

Wood (1974) stated a need for a more theoretical approach:

> A review of the literature revealed a general lack of attention to relationships between the discoveries of perceptual theorists and the concerns of educators about the continuous environmental visual bombardment of their students. (p. 1).

A visual literacy study conducted by Hocking (1978) found:

> The reports of the programs revealed an array of different philosophies, varied conceptualizations of the new communications, its tentative or permanent place in the curriculum and the necessity of faculty preparation for its introduction.

Because many varied groups have each defined and used visual literacy to suit their individual purposes, confusion abounds concerning what visual literacy is and what its role in education is. The instructional technologist can and should provide the leadership in clearing up this confusion.

In the past, discussion of visual literacy centered on the idea that visual literacy is the ability to process visual information. Ausburn and Ausburn (1978) believe that visual literacy enables us to communicate better through our understanding of visual images. The

analogy to verbal literacy was made when Ausburn and Ausburn (1978) wrote, "A visually literate person should be able to read and write visual language" (p. 291). Proponents of visual literacy believe that visual literacy skills enable us to understand and use visuals for communication purposes. However, visual literacy is not only the ability to process visual information, but also the ability to process information visually. In our minds we can picture information, problems, solutions, memories, situations and even our hoped-for futures.

It should be noted that although visual thinking and Arnheim's (1969) work have been discussed in relation to visual literacy, few advocates of visual literacy have incorporated Arnheim's (1969) term visual thinking into a definition. I propose the following definition for visual literacy: visual literacy is the ability to understand and use images and to think and learn in terms of images, i.e., to think visually.

The work of several researchers and practitioners supports the proposed definition of visual literacy (Anderson, 1974; Arnheim, 1967, 1969; Brown, 1980; Bry, 1978; Canelos, 1980; Lorayne & Lucas, 1974; McKim, 1972; Paivio, 1969, 1971; Samples, 1975; Sheehan, 1972). McKim (1972) said that visual thinking could be taught, and he wrote about various visual thinking exercises. Samples (1976) believed that visual thinking involved the right hemisphere of the brain or what he called the "metaphoric mind" (p. 2). Paivio (1969, 1971), Olson (1974), Gross (1973, 1974), Sheehan (1972), Salomon (1979) and Levie (1978) considered the process of decoding symbolic systems as a part of visual thinking.

The practices of memory techniques by Lorayne and Lucas (1974), Luria (1968) and Loftus (1980) have implications for visual literacy training and theory applications. The research of Salomon (1979), Fleming (1977), Paivio (1971, 1975) and Canelos (1980) in mental imagery, dual coding, and mnemonics provides important empirical data for theory development.

Practitioners such as Bry (1978) have used an image technique in therapy sessions. In Bry's book, Visualization: Directing the Movies of Your Mind, she explained, "Through our movies-of-the-mind, however, we can create a state of awareness in which we are not thinking about, or figuring out, or analyzing our experiences, but actually experiencing them directly" (p. 6)

Another practitioner, Gendlin (1978) at the University of Chicago, practiced a similiar technique with what he described as "focusing." In his book, Focusing, Gendlin (1978) described how a person can strip away verbalizations, analyses and tension by focusing toward greater awareness through bodily awareness, imagery and feeling. The subject knows when a deeper awareness level is reached because there is a release of tension or what Gendlin called a "body shift" (p. 26).

Samuels and Samuels (1975) wrote that visualization has been used for spiritual goals, materialistic goals, mental health and healing (p. 30). Bry (1978) described the use of visualization by Dr. Gerald Jampolsky for treating problems ranging from learning disabilities to leukemia (p. 86). Also Carl Simonton and Stephanie Simonton used visualization along with traditional therapy on cancer patients (Bry, 1978, pp. 68-69).

Bry's (1978) discussion of visualization has important ramifications for theory development of visual literacy. Bry (1978) wrote:

> As doctors and others now know from the science of biofeedback, the rate of our heartbeat and other body functions can be altered by changing what we are feeling and thinking. And as students of the mind are rediscovering from the writings of artists and scientists throughout history, solutions to seemingly insoluble problems can be found by turning in to our inner images. (p. 7)

That the viewer retains an image and uses it to create meaning, that is, that he thinks visually, is crucial to the development of a theoretical foundation of visual literacy. Many educators see film study as an area particularly suitable for understanding imagery and visualization. Woodruff (1976) elaborated on the image element: "The viewer goes through a process of re-editing the film in her/his own mind. Memorable images are 'spliced' together, the sum of which becomes an individual meaning for the film" (p. 66).

Woodruff (1976) found that meaning and memory of the film were associated with images of the film, not the specific information the viewer received nor the plot (p. 64). The few images received and retained by the viewer were crucial to understanding and meaning of the film. Meaning could be attached to misperceived images and similar images tended to become generalized (p. 65). Also, people from similar backgrounds tended to respond in similar ways to the film, but people

tended to react to the images of the film rather than be influenced by each other's comments (Woodruff, 1976, p. 63).

People also attended to that information they felt would benefit them in the future (Woodruff, 1976, p. 63). Woouruff (1976) commented on visual literacy and viewer types:

> It seems crucial to point out that number of films watched does not necessarily equal an ability to watch films well. It may be that more "astute" viewers go through a different process than less "astute" viewers, but that seems unlikely. A better hypothesis is that more astute viewers pick up more cues, i.e., that they use more information in going through the same process as other viewers. If amount of information perceived, then, is an implied definition of an astute viewer, it seems that methods ought to be devised to teach people to be visually literate in order to increase their enjoyment of the film experience. The reader should not confuse the notion of teaching people to "read" visually with teaching people to come up with the same meaning. (p. 76)

Woodruff (1976) explained that the viewer is a co-creater of the film (p. 66). Viewers select images that are meaningful to them; they respond primarily to visual or to narrative information but not to both simultaneously (p. 65). Woodruff (1976) explained the process of re-editing or co-creating the film by the viewer:

> Film viewing is a creative process just as film making

> is creative. Though the film maker may have a specific intent or message to convey, the viewer is nevertheless the co-creater of the message (as in other types of transactions), for she/he brings much of herself/himself to the communcation situation. Out of our individual backgrounds and motives, we attend to salient images for us. As a child is subject to influences other than those of the parent, so the film maker cannot be certain that his creation will be interpreted the way she/he intended; the film as interpreted has a life of its own. (p. 66)

Schiller (1976) wrote:

> Being visually literate is an aptitude. It is a capacity to use <u>imagery</u> (visual and manipulative impression and expression) to facilitate, deepen and complete comprehension and conceptual learning. By conceptual learning we mean the awareness of describable properties, relationships and connections among all visible and invisible phenomena in human experiences. (p. 4)

Teaching students to be visually literate therefore involves sharing mental strategies that use mental imagery, visualization, mnemonics, dual coding and symbolic systems to store information, interpret and develop ideas, and solve problems. Processing information visually, not just the processing of visual information, should be an important component of a definition for visual literacy. I suggest it is time to take another step toward the development of a theory for visual literacy by including the research on strategies and methods for

thinking visually. Visual literacy is not only understanding and creating visual language; it is a means to visual thinking.

I suggest that theoreticians develop a theory for visual literacy based on some of the original sources suggested by Debes (1968, 1969, 1970, 1972, 1974, 1975) and newer sources mentioned in this paper. Even though visual literacy has been a concept since 1969 (Debes, 1972) no substantive theory has been developed.

Indeed, the concept has even met with some resistance in education, especially in the language arts and in instructional technology. Unless the theoretical foundations of visual literacy can be developed so that research and practice may have some philosophical direction and justification, visual literacy may become just a passing fad. To prevent this from happening, visual literacy advocates should consider the following recommendations:

1. Reexamine the older sources suggested by Debes (1968, 1969) to see if there is any justifiable basis for theory development in visual literacy.
2. Review some of the newer sources suggested by this author's definition that relate to mental imagery, dual coding, mnemonics and visualization; make some philosophical connections between these newer sources and the older ones; and develop a substantive theory that is convincing.
3. Design future empirical research that stresses the visual thinking component of this author's definition.

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